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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,306	10/25/2000	Seiji Umemoto	Q61458	1186

7590 11/05/2003  
Sughrue Mion Zinn MacPeak & Seas PLLC  
2100 Pennsylvania Avenue NW  
Washington, DC 20037

EXAMINER

CHOI, JACOB Y

ART UNIT	PAPER NUMBER
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2875

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/695,306

Applicant(s)

UMEMOTO, SEIJI

Examiner

Jacob Y Choi

Art Unit

2875

MW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 9 and 10 is/are rejected.
- 7) ☒ Claim(s) 2-4 and 6-8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 3.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,5,9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (USPN 6,323,919) in view of Sonehara (USPN 4,870,484).

Regarding claim 1, Yang et al. discloses a light pipe (20) including an upper surface (upper surface of the light guide plate, 20), a lower surface (bottom surface of the light guide plate, 20), and an incidence side surface (side surface of the light guide plate where the linear light source is against), and including a light output means (12) formed in the upper surface so that light incident on the incidence side surface exits from the lower surface through the light output means while light incident on the lower surface is transmitted through the upper surface (figures 1B), and a linear light source (32) disposed on the incidence side surface of the light pipe, whereby information light (10) generated on the lower surface of the light pipe is transmitted and made visible through the upper surface of the light pipe. Yang et al. discloses the claimed invention, except the linear light source having an effective light emission region, which is longer than a longitudinal length of the incidence side surface. Sonehara teaches that it is

known to have the linear light source having an effective light emission region, which is longer than a longitudinal length of the incidence side surface (figure 9A). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use modification in Yang et al. as taught by Sonehara in order to utilize more stable and uniform effective light emission region of the linear light source, since it is known that near electrodes/ends of the linear light source delivers unstable and un-uniform effective light emission.

Regarding claim 5, Yang et al. in view of Sonehara discloses claimed invention, explained above. In addition, Yang et al. discloses a liquid-crystal cell disposed on a lower surface of the plane light unit, the liquid-crystal cell including a reflection layer (8).

Regarding claim 9, Yang et al. in view of Sonehara discloses claimed invention, explained above. In addition, Yang et al. discloses the information light on the lower surface of the light pipe is constituted by an image and the image is visibly transmitted and made visible through the upper surface of the light pipe.

Regarding claim 10, Yang et al. in view of Sonehara discloses claimed invention, explained above. In addition, Yang et al. discloses the image is provided by a liquid crystal cell, which is provided separately from the light pipe.

### ***Allowable Subject Matter***

3. Claims 2, 3, 4, 6, 7 & 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the claims recite a specific detail structure of a plane light source unit comprising the light output means of the light pipe has a repetitive structure of prisms-like irregularities arranged at intervals of a pitch in a range of from 50 $\mu$ m to 1 mm, each of the prism-like irregularities being constituted by a combination of a short side surface and a long side surface, the short side surface is made of a slope inclined down from the incidence the surface toward an end side opposite to the incidence side surface at an inclination angle in a range of from 30 to 45 degrees with respect to a reference plane of the lower surface, and the long side surface is made of a slope having an inclination angle in a range of from 0-10 degrees with respect to the reference plane, so that a difference between the inclination angle is not larger than 5 degrees as a whole, the difference between the inclination angle of adjacent long side surfaces is not larger than 1 degree, and a projected area of the long side surface on the reference plane is not smaller than five times as large as that of the short side surface. Because none of the reference disclosed the combination of a linear light source having an effective light emission region, which is longer than a longitudinal length of the incidence side surface with a detailed structure of the light pipe, nor is there any motivation to combine them, the claims deemed patentable over the prior art of record.

#### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1,5,9 and 10 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Masuda et al. (USPN 6,340,999) – front light, and reflective type LCD including same

Yano et al. (USPN 6,507,378) – reflection type liquid-crystal display unit

Umemoto et al. (USPN 6,196,692) – light conductive plate, surface light source device, and reflection type liquid-crystal display

Niida et al. (USPN 6,607,279) – light guide plate

Bao et al. (USPN 6,266,108) – reflective liquid crystal display device with panel, a light guide plate and polarizing plate

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Y Choi whose telephone number is (703) 308-4792. The examiner can normally be reached on Monday-Friday (10:00-7:00).

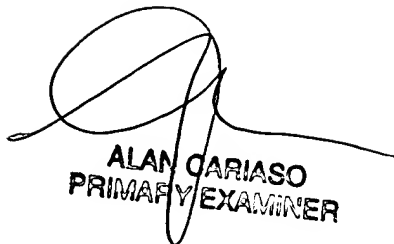
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703) 305-4939. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-7724.

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Art Unit: 2875

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ALAN CARIASO  
PRIMARY EXAMINER